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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,250	02/07/2002	Gerard W. Ernst	81263ACEB	3913

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EXAMINER
KORNAKOV, MICHAIL

ART UNIT	PAPER NUMBER
1746	5

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/072,250	ERNST ET AL.	
	Examiner	Art Unit	
	Michael Kornakov	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Although the present application in which the benefits of an earlier application are desired contains a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)), the continuity data should be updated, Serial No. 09/624,627 is now U.S. Patent 6,543,078 and U.S. Application No. 09/624,878 is now U.S. Patent 6,490,746.

2. It is suggested that the title is changed to "Method for cleaning charged particles from the object" in order to better reflect pending claims.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. In the instant case Fig.1 shows a "typical object to be cleaned" and does not recite any features of claimed cleaning method, or apparatus for cleaning. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 9-11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-20 of U.S. Patent No. 6,490,746. Although the conflicting claims are not identical, they are not patentably distinct from each other because the difference in the instant claim 9 and claim 18 of U.S.'746 is:

a) "irregular surface" vs. "irregular undulating surface" with regard to the surface to be cleaned (in preamble and steps);

b) "ionizing member arranged in said partially enclosed enclosure" vs. "pair of ionizing members positioned on opposite walls of said partially enclosed enclosure" in the first step;

c) on the step of ionizing the difference is neutralizing first part of the surface to be cleaned and then second part of the.... surface" to be cleaned in U.S.'746 vs. just "neutralizing the ....surface", as per instant claims.

With regard to difference (a), it is noted that "Webster's" definition of "undulating" is " having a wavy surface, edge or markings", which fits the generic meaning of

"irregular". Therefore a person skilled in the art would have found a specie of "undulating surface" obvious from a genus of "irregular surface".

With regard to a difference (b), it is noted here that the claimed invention calls for the process claims, wherein the steps of the process are met by the applied prior art, and the structural limitations of apparatus do not present manipulative difference between the claimed process steps and the prior art process. Therefore, the recitation of specific structural limitations of apparatus for performing such steps does not serve to limit the claim. See, e.g., ***In re Otto***, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). With regard to a pair of ionizing members vs. just ionizing member (as per instant claim 9), although the U.S.'746 did not claim a plurality of members, it is Court's decision that mere duplication of parts has no patentable significance unless a new and unexpected result is produced, ***In re Harza***, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)

With regard to difference (c), wherein neutralization in U.S.'746 is made on the first portion of the surface and then on the second portion of the surface vs. generally recited neutralizing step, since the outcomes of both instantly claimed step and that of U.S.'746 are identical i.e. dislodging particles electrostatically attached to the surface, and since generic step of neutralizing is identical in both claims, a it would have been obvious to a person skilled in the art that "continuous" neutralizing of the whole surface of the instant claim 9 and "batch" neutralizing of one portion and then the other portion of claim 18 of U.S.'746 are obvious variants of each other.

Instant claims 10 and 11 are identical to claims 19, 20 of U.S.'746.

6. Claims 9-11 are pending in the Application.

7. Before the issues of prior art rejections are discussed, Examiner notes that in light of the instant specification, as broadly explained on page 2, line 24 the "irregular surfaces" of the instant claims are understood as non-planar surfaces.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young (U.S. 5,265,298) in view of Allen et al (4, 987,630).

Young discloses a cleaning method (col.3, line 53 and col. 4, line 64) for cleaning electrostatically bound dust particles from container walls (col. 2, line 39, col. 3, lines 64-66). The cleaning process is applied for removal dust particles from **open-ended cans** and the like (abstract, lines 1,2). This reads on "irregular surfaces" as per instant claims in light of the instant specification that explains it as non-planar surfaces.

In the cleaning process, Young provides a cleaning apparatus (Fig.1-3 numeral 10, col.3, line, 9), which comprises an open-ended enclosure 11 (col. 3, line 10) with a source of air that is an ionized air injector 15 having a nozzle 12. The enclosure, through whose end openings the containers pass virtually unimpeded, is pressurized with filtered air to keep the containers from being recontaminated immediately after cleaning (See abstract). The injector 15 is connected to a pulse controller 14 adjusted to give static free discharge (col. 4, lines 13-16). This reads on the source of air and ionizing member arranged in the partially enclosed enclosure. This arrangement of parts and features of the cleaning station is identical to that instantly claimed and is therefore, fully capable of bombarding objects with ions.

With regard **to providing an object support member** for supporting objects for cleaning, **and arranging objects** on said object support member, as well as

positioning said objects inside partially enclosed enclosure, Young teaches that **supported by structural members** attached to the enclosure 11, the guide rails 24, as well as guide rails 25, 26, 27, are maintained in **generally parallel alignment** with each other, the guide rails forming a raceway which limits the **vertical and lateral movements of the containers 13** as **they move through the enclosure 11**.(col. 3, lines 29-34).

With regard to the step of directing a curtain-like stream of air across the surface, and the step of ionizing the surface, wherein the ionization comprises neutralization of static charges so as to dislodge particles, as per instant claim 9, Young teaches that inside the enclosure 11, the containers 13 encounter **ionized, compressed air** sprayed from the nozzle 12 of the cleaning station. The force of the compressed air **tends to physically dislodge dust particles held by electrostatic charges to the walls of the container.** The impact of the compressed air also causes the container 13 to bounce against the upper guide rail 27**, contributing to the dislodgement of the dust particles**. Once exposed, **ions in the air flow neutralize these charges**, thereby **eliminating attractive forces between the dust particles and the container walls.** This teaching of Young expressly reads on the above discussed limitations of the instant claim 9.

The next step of the instant claim 9 is concerned with continuously exhausting the enclosure in order to eliminate the particles. With regard to this step, Young explicitly meets the limitations by teaching that suction (exhausting) from the vacuum inlet 16, over which the containers 13 travel immediately downstream of the ionized

compressed air spray, then pulls suspended dust particles out of the container 13 and into a slot 22 forming the entrance to the vacuum inlet 16. From the inlet 16, the dust particles are sucked into a vacuum manifold 18, which is fluidly connected, by an adapter 19, to the vacuum source (col. 3, line 66 through col. 4, line 5).

With regard to the last step of removing objects from the enclosure, Young teaches that the containers can move through the enclosure at a rate of 1500 containers per minute (col. 5, lines 4,5). This inherently means that each individual container is removed from the enclosure in order for the other one to be entered.

With regard to limitations of claim 10, which is concerned with a numerical value of voltage applied to ionizing member, Young teaches that in the method, the controller 14 is adjusted to give a static free discharge from the injector nozzle 12, as measured by a hand-held static meter, at an alternating current of about 10 microamps at a frequency of 3 to 5 cycles per second and at an output voltage in a range of **5 kV to 12 kV (5,000 - 12,000 Volts)** (col. 4, lines 15-20). Therefore the claimed voltage value is within the range of conventionally applied and taught by Young range.

With regard to limitations of claim 11, which is concerned with filtering air prior to directing, Young states that entering an elbow connected to the injector 15 through a supply tube 17, filtered compressed air is ionized and **then forced** into passageways within a support 43, which feed into the nozzle 12 (Fig. 4, 5 and col. 4, lines 6-9).

The disclosure of Young differs from the instant claim 9 by being silent about **curtain-like** stream of air. However, Young suggests to a person skilled in the art to

utilize an ionized air injector with a nozzle (col.1, lines 67, 68 and col. 2, lines 1,2), which are known in the art for producing different types of streams.

Thus, Allen et al (U.S. 4,987,630) discloses a method and apparatus for cleaning instrument clusters or other partially assembled items (col.3, lines 15-2), which are the items with **irregular surface**. Allen utilizes the arrangement similar to that instantly claimed and similar to that of Young, namely, a housing wherein the air supply means are arranged in a specific manner, and wherein the objects to be cleaned are positioned (Fig.1, 2). The apparatus comprises static reduction means, for which a step up transformer provides voltage of 20-7000 volts (col. 2, lines 34-40), that is similar to ionizing member of the instant claims. The system of Allen provides air supply and exhaust (col.2, lines 44-46, 61-65). What is important is that the air stream of Allen is a **curtain like air stream** directed to the objects to be cleaned (col. 2, line 48, and lines 53-60).

Since the processes of Young and Allen are very much similar to each other, and since Young motivates a person skilled in the art to use an ionized air injector with a nozzle to produce a steam that is best for removal electrically charged dust particles, a person skilled in the art, motivated by suggestion of Young, would have found it obvious to utilize **curtain like air stream** of Allen, in a process of Young in order to increase the surface of contact between the object to be cleaned and the cleaning stream, to increase the degree of neutralization of dust particles with ionized air, to eliminate the attractive forces between the particles and the walls of the objects to be cleaned, and thus to arrive at the instantly claimed subject matter.

Therefore, combination of references renders claims 9-11 prima facie obvious and properly rejected under 35 U.S.C. 103(a).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Voneiff et al (U.S. 4,883,542) discloses a method for cleaning containers utilizing air curtain like steam of air; Belanger et al (U.S. 5,557,820) discloses apparatus for producing an ion-rich directable air stream for cleaning objects; Holdsworth (U.S. 4,003,226) discloses a method for removing dust using air blast machine. Other prior art references cited in PTOL-892 show the state of the art in the methods and apparatuses for removing dust.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (703) 305-0400. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872 9310 for regular communications and (703) 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 2450.

M. KORNAKOV

Michael Kornakov
Examiner
Art Unit 1746

April 21, 2003